

REMARKS

Pending Claims:

Claims 1 to 10 were pending. Claims 6 to 8 and 10 have been withdrawn from consideration by the Examiner. Claim 1 has been amended to incorporate the limitations of claim 9. Claim 4 has been amended to correct a clerical error and to provide antecedent basis. Claim 9 has been canceled. The amendments to claims 1 and 4 constitute no new matter, support for which can be found in the specification and drawings.

Rejections under 35 U.S.C. § 103:

Claims 1 to 5 and 9 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,770,149 to Raible in view of U.S. Patent Application Publication No. 2002/0057990 to Ghelli et al. Applicants respectfully traverse this rejection of the claims.

Although Applicants disagree with the Examiner, the claims have been amended to clarify the subject matter of the claims. Claim 1 has been amended to incorporate the limitation of claim 9 which has been canceled. As amended claim 1 requires that the pump be a pulsating pump. The Examiner stated with respect to claim 9 that Raible teaches a pulsating pump (peristaltic pump, col. 9, lines 45-56) but does not teach that the pulsating pump be the pump connected to receive blood from the outlet of the heat exchanger. The Examiner further states that Ghelli teaches a pulsating pump receiving blood from the outlet of a heat exchanger. Therefore, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify Raible to include a pulsating pump receiving blood from the outlet of the heat exchanger, as taught by Ghelli. Applicants disagree. First, the peristaltic pump described by Raible is a separate pump which does not form a part of the integrated system disclosed by Raible. That separate

pump is connected and used only in emergency situations where the centrifugal blood pump of the integrated system fails. In the event of such pump failure Raible discloses a method of bypassing the integrated centrifugal pump and connecting this second or emergency peristaltic pump in a blood return tube which is connected to a recirculation/emergency port 150. There would be no reason for a person of skill in the art to connect this separate peristaltic pump to the outlet of the heat exchanger disclosed in Raible. As a matter of fact such a connection to the separate peristaltic pump could not be made without substantial modification to the integrated system disclosed by Raible. Even if such a connection were made the peristaltic pump would not be integrated into the monolithic assembly as required by claim 1.

Further, a person of skill in the art would have no reason to replace the integrated centrifugal pump of Raible with a pulsating pump such as disclosed in Ghelli and then connect the inlet of that pulsating pump to the outlet of the heat exchanger. Such a modification would require substantial changes to the integrated system disclosed by Raible. A person of skill in the art would have no reason to make those changes, especially since they would eliminate the benefit of the recirculation/emergency port 150 in enabling the integrated pump to be bypassed quickly upon pump failure

Conclusion

In view of Applicants' amendments and remarks, the claims are believed to be in condition for allowance. Reconsideration, withdrawal of the rejections, and passage of the case to issue are respectfully requested.

If any additional fees are due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 16-2312. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

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By


Customer No. 009561

Terry L. Wiles (29,989)

Patrick J. O'Connell (33,984)

POPOVICH, WILES & O'CONNELL, P.A.

650 Third Avenue South, Suite 600

Minneapolis, MN 55402-1911

Telephone: (612) 334-8989

Attorneys for Applicants